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LANGUAGE LEARNING THROUGH STORYBOOK READING IN HEADSTART

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in

The Department of Communication Sciences and Disorders

by

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August 2008

DEDICATION

This is dedicated to the memory of my father

Howard Minnis

Who made me see the true meaning of dedication to completion

no matter the task or goal

ACKNOWLEDGEMENTS

“If I have seen far it is because I have stood on the shoulders of giants”. There have been many successful men and women in my life that have encouraged and supported me in this endeavor. For their many prayers, words of encouragement, and time I will be forever grateful.

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ABSTRACT

The purpose of this study is to explore whether storybooks designed to elicit talk about letters and sounds, termed “alphabet-storybooks” will generate more print referencing behaviors from Head Start teachers than traditional storybooks, and if there is a concomitant positive impact on the learning of the children in these classrooms. In addition, the meaning reference behaviors of adults and impact on children also will be measured to determine if meaning is sacrificed at the expense of print referencing. Four Head Start teachers interactively read either an alphabet storybook or an emergent reading book during daily 15-25 minute sessions. The teachers read the same book for five weekly sessions resulting in six books read over six weeks. During each reading the teacher read and emphasized vocabulary, plot related discussion, phonemic awareness, and print referencing.

Results indicated that Head Start teachers did change their book reading interactions following four training sessions in all categories of behaviors measured, as demonstrated by significant main effects for time for both meaning and form.

Similarly, children did improve across time in both book reading conditions as demonstrated by significant main effects for time for measures of vocabulary, print concepts, and phonemic awareness.

REVIEW OF LITERATURE

In a longitudinal study examining mother-child interactions during book reading, van Kleeck (1998) found that different book genres elicited different types of talk. When alphabet books were read, the adults talked about letters, letter shapes, sounds, sounds in words, and other print referencing behaviors with high frequency, even when children were as young as 3 years old. Such references to print rarely occurred when reading picture books or rhyming books, where instead adults focused on helping the child interpret the meaning of the stories. Other studies found a similar lack of print referencing during storybook reading (e.g., Ezell & Justice, 2000; Phillips & McNaughton, 1990; van Kleeck, Gillam, Hamilton, & McGrath, 1997). However, several studies (Ezell & Justice, 2000; Justice & Ezell, 2000) have demonstrated that when provided specific training, adults, including Head Start teachers (Justice & Ezell, 2002), can and will spend more time during storybook reading attending to print. The purpose of this study is to explore whether storybooks designed to elicit talk about letters and sounds, termed “alphabet-storybooks” will generate more print referencing behaviors from Head Start teachers than traditional storybooks, and if there is a concomitant positive impact on the learning of the children in these classrooms. In addition, the meaning reference behaviors of adults and impact on children also will be measured to determine if meaning is sacrificed at the expense of print referencing.

Emergent Literacy

A wide range of emergent literacy skills develop during the preschool years, particularly among children who are read to frequently during these formative years. Emergent literacy refers to learning about reading, writing, and oral and written aspects of print during the time period before children receive formal reading instruction (Stahl & Miller, 1989; Teale & Sulzby, 1987). Emergent literacy skills include developments in oral language (vocabulary, expressive

language, listening comprehension), phonological awareness (rhyming, blending, segmenting sounds, sound substitutions, sound deletions), print awareness (print conventions, tracking), and alphabet knowledge (letter recognition, letter-sound). According to Justice and Ezell (2004) emergent literacy describes children's earliest attainments in literacy and is thought to encompass the period from birth to about the end of the preschool years. During this period, children begin to distinguish among an array of written language forms and functions (print concepts), show a developing sensitivity to words as units of both print and sound (concept of word, phonological awareness), and have emerging knowledge of the distinctive features and names of individual alphabet letters (alphabet knowledge).

The ability to successfully transition from emergent to early literacy is related to a child's ability to acquire sufficient levels of knowledge for both written language and phonological awareness (Badian, 2000). According to the National Research Council on the Prevention of Reading Difficulties in Young Children (1998) and the National Association of the Education of Young Children (NAEYC), many problems in school-aged children could actually be prevented if learners began formal schooling with the appropriate emergent literacy skills to support this transition. Lack of these skills can mean long-term struggles with reading and writing. Numerous studies have shown that deficits in processing the phonological features of language account for a significant proportion of beginning reading problems and correlated difficulties in reading comprehension, background knowledge, memory, and vocabulary differences (Liberman & Shankweiler, 1985; Mann & Brady, 1988; Rack, Snowling, & Olson, 1992; Torgesen, Wagner, Simmons, & Laughon, 1990; Wagner & Torgesen, 1987). Morris, Bloodgood, and Perney (2003) showed that by mid-kindergarten, alphabet recognition, concept of word in text, spelling with beginning and ending consonants, and word recognition effectively predicted success in first grade reading. Stevenson and Newman (1986) found a correlation between the

ability to name the letters of the alphabet as a child entered kindergarten and performance on a standardized test of reading comprehension in the tenth grade, suggesting lack of success in the early grades can have a long-term effect on reading ability.

Children of poverty are particularly at-risk for development of emergent literacy abilities (Frijters, Barron, & Brunello, 2000; Leseman & de Jong, 1998; McCormick & Mason, 1986; Neuman, 1999; Ninio, 1980; Purcell-Gates, 1996). Children with infrequent parent-child shared storybook reading opportunities have more difficulty acquiring emergent literacy knowledge compared to children who routinely engage in this activity (Raz & Bryant, 1990; Wells, 1985). A daily storybook routine is far more typical in middle income or professional homes than low-socioeconomic status (SES) households, and it is implicated in the relatively low levels of emergent literacy skill observed in low-SES children (Feitelson & Goldstein, 1986; McCormick & Mason, 1986; Ninio, 1980; Teale, 1986; Whitehurst et al., 1994). Middle SES children have greater skill in print production, book reading concepts, and recognizing environmental print (Dickinson & Snow, 1987). Despite specific instruction on learning the alphabet, Lonigan and colleagues (1999) found that low-SES children in Head Start demonstrated relatively low levels of skill on measures of alphabet knowledge, letter-sound knowledge, book reading concepts, and environmental print decoding compared to middle-class peers. Although letter knowledge may be a strong component in preschool programs, children learn from experiences such as alphabet book reading. In a study of 59 parents of preschool children, Hildebrand and Bader (1992) found that children who performed high on three emergent literacy measures, including writing letters of the alphabet, were more likely to have parents who provided them with alphabet books, alphabet blocks, and shapes.

Head Start has long worked to close the gap between children from low-income families and their higher-income peers. However, the 2001 Head Start Family and Child Experiences

Survey (FACES) found that while children are making significant progress in some areas such as vocabulary and pre-writing during the Head Start year, they are not improving in areas that predict reading success, including phonemic awareness, letter identification and knowledge of print conventions. Print conventions are considered fundamentals for understanding the process of reading, and include an awareness that the print rather than the picture represents the words and carries a message, that there are conventions that need to be followed such as reading the print left to right and top to bottom, that there are differences between words and letters, that letters have both upper and lower case forms, that punctuation communicates pragmatic information such as emphasis, and that books have some common characteristics such as an author, title, illustrator, and spine (Clay, 1972). In April 2002, President Bush launched the Early Childhood Initiative—Good Start, Grow Smart—that included strengthening Head Start by developing a new accountability system, termed the National Reporting System (NRS), to ensure that every Head Start program assesses child outcomes. The Early Childhood Literacy Initiative considers Head Start programs can do more to support children’s cognitive development, especially to significantly boost language development and to help preschoolers acquire the knowledge, skills, and attitudes that predict later success in literacy. It is therefore critical to explore methods that may help both teachers and children to accomplish this goal.

Emergent Literacy Is Developmental

The skills of emergent literacy are developmental, with abilities changing in a predictable sequence across time when a child is exposed to meaningful literacy experiences. Thus, like other language skills, emergent literacy abilities appear to be a result of both nature and nurture. For example, Pick and colleagues (1978) found that preschool children improved their ability to discriminate letter sequences that were “like words.” Five-year-olds were significantly less likely to accept very long strings of letters as words than 3-year-old children. Such findings

suggest that well before receiving formal reading instruction, young children are already forming hypotheses about the structure of written language (Schickedanz, 1982). Lomax and McGee (1987) examined 3- to 6-year-old children's naming abilities for the 26 letters of the alphabet in both upper-case and lower-case form. All children were from middle-income homes. Children at 3 years of age performed with an overall rate of 42% accuracy, whereas 5-year-old children performed with 93% accuracy. Norris (2003) synthesized extant literature to profile sequences of development for 10 print and phonological awareness abilities that emerge between the ages of 3 and 7 years, including alphabet knowledge, concept of print, rhyming, print conventions, letter-sound correspondence, sound in word positions, phoneme manipulation, and developmental spelling attempts (see Appendix D). Each of these sources of phonological awareness contributes to a child's ability to discover and use the alphabetic principle. Early emerging sources, such as rhyme and alliteration (i.e., recognizing initial sounds of words) are steps in the process of being able to segment a word into its component sound. Awareness of when words rhyme and how to create words that rhyme in oral words form the foundation for recognizing rimes or word families in written words, a skill important for efficient decoding and spelling (at = cat, hat, rat, mat, that) (Adams, 1990; Ball & Blachman, 1991; Vellutino & Scanlon, 1987).

It appears that, between the ages of 3 to 5 years, children rapidly acquire sophisticated knowledge about the nature of written language. Findings such as these confirm the significance of the preschool period as a time in which critical knowledge about the structure of written language is acquired. Along with phonological awareness, which refers to children's abilities to consciously reflect upon and manipulate the sounds of a language (Adams, 1990; Ball & Blachman, 1991; Vellutino & Scanlon, 1987), children's print awareness serves as a key foundation upon which later reading development will build (Badian, 1982; Stuart, 1995).

Storybook Reading and Emergent Literacy

Longitudinal studies of emergent literacy suggest that reading and writing develop in a concurrent and interrelated manner in young children. Early knowledge of literacy emerges from experiences that permit and promote meaningful interaction with oral and written language (Sulzby & Teale, 1991), such as parent-child storybook reading or telling a story through drawing and developmental spelling (Hiebert & Papierz, 1989). These experiences provide young children with a context for exploring the form, purpose, and meaning of print. Studies of parent-child storybook reading have shown that parents use a wide range of strategies that enable children to learn how to attend to language and apply this knowledge to literacy situations (Hiebert, 1981; Mason & Allen, 1986; Morrow et al., 1990; Teale & Sulzby, 1987). Parents point to important information, comment, ask questions, respond to child-initiated remarks, talk about pictures, and repeat or expand upon child utterances. Parents of early readers (Thomas, cited in van Kleeck, 1990) and parents of children who are successful in school (Heath; Wells, cited in van Kleeck) do more than read the words in books and elicit labels, objects, and details of events. They ask questions and make comments that enable children to relate information in books to their own experiences or familiar events, and engage them in discussing, interpreting, and drawing inferences (Teale & Sulzby, 1991; van Kleeck, 1990). However, parents rarely make direct reference to letters or conventions of print, or to elements of phonemic awareness such as sounds in words or rhyme unless alphabet books are read (van Kleeck, 1990).

Several studies have examined the use of storybooks to increase awareness of print referencing behaviors when these skills were specifically targeted and taught. A series of studies (Ezell & Justice, 2000; Ezell et al., 2000) demonstrated that adults can be trained to use reference to print when reading picture books and/ or rhyming books to preschool children. In these studies, adults (e.g., speech-language pathology students, parents) were taught to use print-

referencing strategies, a set of strategies including questions, comments, and requests about print as well as several nonverbal strategies such as pointing to print or tracking print left-to-right while reading books with children. The training successfully increased adult print-referencing behaviors during picture-book-reading interactions with 4-year-old children, and increased children's verbal comments about print.

Other studies further examined the effects of adult attention to print during storybook reading on emergent literacy skills in children. In a pilot study, Ezell, Justice, and Parsons (2000) examined the effects a shared book storybook reading on receptive and expressive alphabet knowledge and knowledge of print. Four parents and their preschool children participated in five training sessions (1 time weekly) for print referencing during storybook reading. The first session was comprised of pre-testing and orientation, the following three sessions involved group training and individual practice reading sessions' and the last session was used for posttesting. A series of focused reading behaviors were taught during the three training sessions, conducted through videotaped demonstrations and a manual. The first training session focused on the print referencing behaviors by asking questions, tracking the print, making comments and requests about print, and pointing to the print. The second training session focused on techniques such as praise, a pause for responses, expansions on the child's utterance, repetition, and open-ended questions. The third training focused on book management strategies, which consisted of allowing the child to explore the book independently, turning pages and linking the text to the child's life. Additionally, the parents were given eight children's storybooks to read in the instructed way to their children during the week between training sessions. Gains were made in the area of alphabetic knowledge and in the area of print awareness, though not significant in the short duration of the study.

Justice and Ezell (2000) conducted a home-based program with 28 parents and their 4-year-old children who were randomly assigned to an experimental group that received training in verbal and nonverbal print-referencing or a control group. Each dyad read two books each week for a 4-week period. Parents in the experimental group used significantly more print-referencing behaviors at posttest, and their children made significantly greater gains for words in print, print concepts, and word segmentation. Both groups made significant gains in connecting the printed words to meaning, indicating that repeated storybook reading is an important activity for discovering this principle.

Justice, Weber, Ezell, and Bateman (2002) explored the types of responses produced by four-year-olds in response to parents' use of questions, comments, and requests about print during shared reading of a rhyming book. Fifteen parents, including 1 father, were trained in the use of strategies classified as either print references that were prompts (i.e., questions and requests that carry a high level of obligation for children to respond) versus those that were comments (i.e., low response obligations) (Olsen-Fulero, 1982; Olsen-Fulero & Conforti, 1983). Results revealed children responded contingently to approximately 60% of parents' verbal print references, with greater response to prompts than comments. Children responded equally to book-reading and word-reading references, including behaviors such as predicting a word from the text or other behaviors that were above their independent skill level. These findings suggest that typically developing middle-class children as young as four years of age have the requisite skills needed to participate in talk about print and concepts of wordness in the context of a picture, and that they respond to high-level tasks when parents prompt with questions and requests.

Justice and Ezell (2002) explored the effects of print referencing during storybook reading with children from low-income households. Thirty 3-5 year old children enrolled in

Head Start were matched on chronological age and then randomly placed into either a shared reading with a print focus (experimental) or a picture focus (control) group. Each group received 24 small-group reading sessions over an eight week period at their Head Start setting. Results showed that both groups made significant gains from pretest to posttest on alphabet knowledge, but the print focus group performing significantly better than the meaning-focus group. The children who participated in the print-focus reading sessions also made significantly greater gains on words in print and print recognition, tasks for which many children were unable to perform at pretest. The control group subjects made only marginal gains on these tasks. These results suggested that awareness of these skills may require more direct instruction for children exhibiting low levels of literacy knowledge, and that adult-mediated talk about printed words are required to stimulate such knowledge.

Justice, Chow, Capellini, Flanigan, and Colton (2003) taught emergent literacy skills to four-year-old children who were experiencing significant problems in oral language and from low-income homes. Eighteen 4-5 year old children were provided 12-weeks of instruction in two 6-week blocks of two sessions per week (i.e., 12 sessions per block). Subjects were alternately assigned to either structured activities targeting print knowledge and phonological awareness, or an unstructured storybook reading condition. Each child received one block of structured activities focusing on name writing, alphabet recitation, and phonological awareness games. Each child also participated in a six-week block of storybook reading during which they engaged in talk about the story, including making predictions, answering questions, and receiving feedback on comments (i.e., a meaning focus). Retelling activities followed the reading. Results indicated substantial literacy growth across the 12-week intervention period for both print knowledge and phonological awareness, with the greatest gains in alphabet knowledge, phonological segmentation, and rhyme. All emergent literacy areas improved

significantly during the structured activities, while only phonological segmentation performance changed during the storybook reading block. The child's oral language skill and interest in literacy were strong predictors of performance at posttest. This study suggests that explicit teaching can result in rapid and significant gains in emergent literacy for at-risk children. The study did not compare explicit teaching in separate activities versus within a storybook reading context (i.e., a print focus). Given that earlier studies found significant gains when adults maintained a print-focus during storybook reading, the relative benefits of explicit teaching in isolated activities versus explicit teaching within the context of storybook reading remains unanswered.

Justice, Ritter, Gray, and Pillow (2005) engaged thirty 4-5 year old preschoolers (22 typically developing, 8 language impaired) in storybook reading with an explicit focus on phonemic awareness. They were compared on measures of rhyme, alliteration, and sound segmentation. All subjects participated in reading 6 storybooks twice (two sessions per week), for a total of 12 weeks of intervention. Nine questions about sound (Can you think of another word that starts with /s/? What word rhymes with X?) were embedded into each storybook reading. Results indicated that differential results were obtained for the typically developing children versus those with language impairment. Language impaired children made gains primarily in segmentation, while typically developing children made gains in all phonological awareness skills tested. The results suggest that for both groups, storybook reading is an effective context for teaching phonological awareness skills, although more time and exposures are needed for language impaired children to respond.

Alphabet Storybooks

The extant research on storybook reading reveals that it provides an efficacious context for teaching a wide range of print awareness and phonological awareness skills for typically

developing children and for children at-risk because of poverty and/or language delay. In each of these studies, only alphabet books spontaneously elicited talk about print or sound. Parents or teachers needed to be trained in relatively lengthy and frequent training sessions to provide print or sound-focused prompts to children during the reading of storybooks. Alphabet books elicit talk about print because the cues are present in the pictures (i.e., isolated alphabetical letters, pictures of words that begin with the sound) and the text (i.e., explicit mention of words and sounds associated with the letter). However, these books lack meaningful stories and do not follow patterns of narrative structure that help children learn the meaningful aspects of reading and comprehension.

This study will examine the effects of books termed “alphabet-storybooks” that maintain elements of both types of books. Each alphabet-storybook focuses on a specific phoneme and its associated letter or digraph. The characters in the stories, called Phonic Faces, each depict the letter drawn in his/her mouth producing the sound associated with that grapheme. Thus, the letter “b” is shown as the vertical line stopping the sound in the mouth and the circle as the lower lip which bounces to release the stopped air in the book “Bejay Bounces.” On each page, the /b/ sound appears as a natural part of the story as Bejay bounces a variety of balls which make the /b/ sound as they bounce across the floor. Thus, as the story is read, repeated opportunities to hear the sound and to associate it with both the letter and the speech production cues are encountered. In addition, the stories have numerous words that contain the sound and letter in different word positions as well as rhyming words. The stories also contain numerous vocabulary words and concepts that are present in both the pictures and the text to facilitate learning. The stories differ in story structure from simple sequences to complete narratives with problems, plans, attempts, and outcomes.

Two earlier studies demonstrated that Phonic Faces alphabet-storybooks are more

effective in eliciting print and sound referencing behaviors than traditional storybooks for both adults and children (Brazier-Carter, 2005; Norris & Hoffman, 2004). It is unknown whether this type of book will have any long-term effect on children's learning the skills shown to be important for reading. Two of these behaviors, phonemic awareness and print referencing, have been shown to be more prevalent in alphabet-book reading (van Kleeck, 1990), while vocabulary and narrative development are associated with storybooks. This study compared the use of the alphabet-storybooks with traditional emergent reader storybooks over a 6-week intervention period. The questions of this study include two questions focused on teacher behaviors, and two questions focusing on child outcomes:

1. Are there differences in a teacher's meaning referencing behaviors (vocabulary and story development) between alphabet-storybooks and emergent reader storybooks?
2. Are there differences in a teacher's print referencing behaviors (alphabet recognition, letter-sound association, rhyme, and book conventions) between alphabet-storybooks and emergent reader storybooks?
3. Are there differences in children's understanding of meaning as measured by vocabulary acquisition between alphabet-storybooks and emergent reader storybooks?
4. Are there differences in children's learning of two phonemic awareness skills (initial sounds, and rhyme) between alphabet-storybooks and emergent reader storybooks?

METHODS

Four Head Start teachers interactively read either an alphabet storybook or an emergent reading book during daily 15-25 minute sessions. The teachers read the same book for five weekly sessions resulting in six books read over six weeks. During each reading the teacher read and emphasized vocabulary, plot related discussion, phonemic awareness, and print referencing. The teachers were videotaped prior to intervention and then once per week. Progress made by children was compared using a series of measurements.

Participants

Participants in this study included four Head Start teachers and 24 children. Twelve children were in the Phonic Faces book reading condition, while twelve subjects matched for pretest abilities were in the emergent book reading condition.

Teacher Participants. Four Head Start teachers were recruited to participate in the study, two in the traditional storybook group and two in the alphabet storybook group. Two participants were recruited from each of two different schools. Each teacher was videotaped prior to the beginning of the intervention reading both an emergent reader and an alphabet storybook. Teachers were then matched for reading style (primarily verbatim readers versus story elaborators). Members of each matched pair then were assigned to either the traditional emergent storybook group or the Phonic Faces alphabet-storybook condition.

The teachers that participated completed consent and teacher information forms. The teacher information form included general information about educational level, years of teaching experience, and training related to storybook reading. Table 1 profiles the teacher characteristics for both book conditions. All of the teachers were African American females with teaching experience in Head Start ranging from 2 to 15 (average = 9) years, and only one had additional teaching experience (one had a year of teaching elementary school). All of the participants held

college degrees, one in education, and three in early childhood education. All of the teachers reported that they had previously received literacy or book reading training.

Table 1

Characteristics of Teachers Participating in the Phonic Faces Alphabet Storybook versus the Emergent Reader Book Conditions.

Teacher	School	Gender	Group	Degree	Area	Head Start Experience	Literacy Workshops
1	A	F	PhF	B.S.	EarCh	8	10
2	A	F	EmR	B.S.	EarCh	4	1
3	B	F	PhF	B.S.	Edu	18	14
4	B	F	EmR	B.S.	EarCh	10	8

Child Participants. Each Head Start classroom had 20-25 three-four year old children who participated in an all-day program. The classrooms contained an array of books, many displayed on bookshelves. Each room also contained a computer with a variety of age-appropriate software. The program adhered to the Head Start Creative Curriculum with a daily schedule that included meals, outdoor activities, and 6 periods (15 to 45 minutes) of structured activities such as circle time, music, small group activity, story, and literacy activities (late in the day immediately before dismissal).

Participants were recruited by sending informational packets home with all three-to-four year old children enrolled in Head Start. The informational packet included a flier describing the present study and a consent form (see Appendices A and B). Those that completed the documents and returned them to their child's center were eligible for participation. To protect the confidentiality of the information disclosed by the participant the materials were assigned a

random identification number. The consent form requested general information about the child's developmental milestones and speech and language development in addition to signed consent.

Thirty-four students returned completed forms. However, an unequal number of students were recruited from the different classrooms and teaching conditions. All 34 subjects were administered a pretest battery consisting of the Peabody Picture Vocabulary Test, three subtests from *DIBELS Preschool IGDI* (Walker & Terry, 2004), and an adapted version of the Concepts About Print Test (Clay, 1972). From this pool, 12 pairs of subjects were matched according to their phonemic awareness scores (alliteration + rhyme) for a total of 24 participants. Matches were within one point. Table 2 profiles the characteristics of the subjects by group, including test scores at pretest.

The distribution of children by school included seven subjects in the Phonic Faces condition and five in the emergent reader condition in school A and five subjects in the Phonic Faces condition and seven in the emergent reader condition in school B. Table 3 profiles the pre-intervention mean scores for the two groups. T-tests revealed that the groups did not differ significantly on any of the pre-intervention scores at pre-test.

All of the children who participated met the following eligibility criteria: (a) no history of speech and language services or known delay; (b) parent/teacher report of no developmental concerns; (c) normal hearing as ascertained by passing an audiological screening bilaterally at 25 dB across 1000, 2000, and 4000 Hz.

Materials

A battery of five tests was administered to each child prior to the start of intervention and four were repeated at the end of the six weeks of intervention. These included assessments of meaning (i.e., vocabulary) and form (i.e., book conventions, phonemic awareness).

Table 2

Characteristics of Children Participating in the Phonic Faces Alphabet Storybook versus the Emergent Reader Book Conditions.

School	Group	Age	Gender	PPVT	ALLIT	Naming	Rhyme	CAP
A	PhF	51	M	90	0	12	0	0
A	PhF	41	F	87	0	8	1	0
A	PhF	36	F	90	0	9	1	1
A	PhF	46	F	75	3	11	2	1
A	PhF	48	M	91	3	16	3	1
A	EmR	40	M	95	0	11	0	0
A	EmR	44	F	86	0	12	0	1
A	EmR	48	M	91	0	10	0	1
A	EmR	47	M	86	0	5	0	2
A	EmR	44	F	83	2	11	0	0
A	EmR	46	F	75	2	11	3	0
A	EmR	40	M	98	0	12	7	1
B	PhF	41	F	87	0	9	0	1
B	PhF	48	M	91	0	10	0	1
B	PhF	53	F	69	0	5	0	1
B	PhF	48	M	83	0	7	0	1
B	PhF	41	F	90	0	6	0	1
B	PhF	53	F	78	0	5	1	2
B	PhF	48	F	87	1	13	1	1
B	EmR	41	F	96	0	12	0	0
B	EmR	53	F	82	0	8	0	0
B	EmR	41	M	90	0	8	1	2
B	EmR	41	M	87	1	9	0	1
B	EmR	48	M	78	0	7	1	0

Table 3

Comparison of Phonemic Awareness, Vocabulary, and Concepts of Print Scores between Subjects in Phonic Faces and Emergent Reader Conditions at Pretest.

	Phonic Faces		Traditional			
	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>	<u>t</u>	<u>prob</u>
Phonemic Awareness	1.33	2.06	1.42	2.27	-0.94	0.926
Vocabulary	9.25	3.36	9.67	2.27	-0.36	0.725
Concepts of Print	0.92	0.51	0.67	0.78	0.93	0.364

Vocabulary

- Peabody Picture Vocabulary Test

This test measured listening comprehension for spoken words. A ceiling and a basal were reached to derive a raw score which was converted to a quotient score. This test was used to establish a general language level at pretest.

- Picture Naming Subtest of DIBELS Preschool IGDI

This test measured general vocabulary through naming of pictured items. Categories of words assessed included animals, food, people, household objects, games and sports materials, vehicles, tools, and clothing. The task continued for one minute.

Book Concepts

- Book Conventions: Concepts About Print test (Clay, 1972) (adapted)

Ten items from the CAP were used to measure book conventions. These items included identifying the front cover, title, reading L-R, tracking top to bottom, knowing where to begin reading, when to turn the page, period, question mark, capital letter, and white spaces.

Phonemic Awareness

- Initial Sounds: Alliteration Subtest of DIBELS Preschool IGDI

This test measures initial sound awareness through identification of the picture from a set of three (e.g., house, rake, pig) that starts with the same sound as the target picture (e.g., rain). The task continues for a total of two minutes. The score generated from this format is the number of pictures the child correctly identifies within two minutes.

- Rhyming Subtest of DIBELS Preschool IGDI

This test measures rhyming through identification of the picture from a set of three that rhymes with the target picture. The task continues for a total of two minutes. The score generated from this format is the number of pictures the child correctly identifies within two minutes.

Storybooks

Two types of storybooks were used. Emergent reading books were used in two classrooms, randomly assigned, while Phonic Faces alphabet storybooks were read in two classrooms.

Emergent Reading Books

The emergent reading books were from the emergent reading level of the Wright Group Sunshine series. The stories are predictable, with illustrations that overlap with and extend the text to enable children to learn early critical reading and language skills. As the story was read, repeated opportunities to read the same words and to hear the same language patterns are provided. The stories did not focus on any letters or sounds, but many of the stories are written in rhyme. The stories contained numerous vocabulary words and concepts that were present in both the pictures and the text to facilitate learning. The stories differed in story structure from simple sequences to complete narratives with problems, plans, attempts, and outcomes.

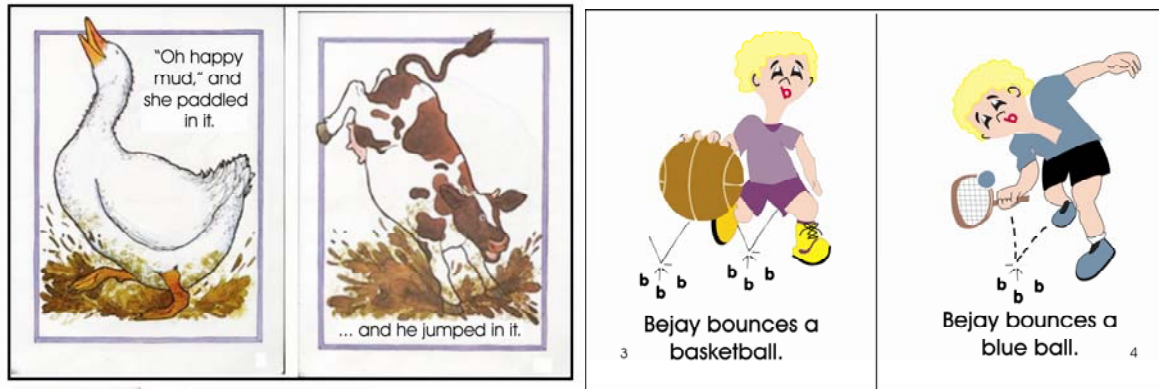


Figure 1. Comparison of *Emergent Reading* and *Phonic Faces Alphabet Storybook* books.

Phonic Faces Alphabet Storybooks

Each book focused on a specific phoneme and its associated letter or digraph. The characters in the stories, called Phonic Faces, each depicted the letter drawn in his/her mouth producing the sound associated with that grapheme. Thus, the letter “b” is shown as the vertical line stopping the sound in the mouth and the circle as the lower lip which bounces to release the stopped air in the book “Bejay Bounces.” On each page, the /b/ sound appeared as a natural part of the story as Bejay bounces a variety of balls which make the /b/ sound as they bounce across the floor. Thus, as the story was read, repeated opportunities to hear the sound and to associate it with both the letter and the speech production cues were encountered. In addition, the stories had numerous words that contained the sound in different word positions as well as rhyming words. The stories also contained numerous vocabulary words and concepts that are present in both the pictures and the text to facilitate learning. The stories differed in story structure from simple sequences to complete narratives with problems, plans, attempts, and outcomes.

Procedures

Each child for whom a consent form was returned was assessed prior to the beginning of the intervention. The assessment was completed at the Head Start center that the child attended. Data was collected in a quiet room with only the participant and the examiner in attendance. The

examiner was a certified speech language pathologist or a student in communication disorders trained by the certified speech language pathologist. At the completion of the intervention, the assessment was repeated.

Each teacher participated in four 30-minute training sessions in one week prior to the beginning of intervention. Teachers were told that a) new studies have shown that we can teach reading skills best using storybooks instead of worksheets if we take the time to emphasize the right skills as we read; b) this study was designed to discover how much children can learn in just 6 weeks; c) it was critical that each time the books were read, each of the skill areas were to be emphasized during the reading, and that the reading take long enough to enable the children to practice these skills. Each session reviewed previous strategies and the teachers were trained on the use of a new reading skill area. The four areas trained included (session 1) phonemic awareness, (session 2) print referencing, (session 3) vocabulary, and (session 4) narrative. Three techniques were trained during the training session for each area, for a total of 12 techniques. The training sessions discussed the importance of the skill for later reading development, and modeled the three techniques to be used to develop the skill. Each teacher effectively modeled the demonstrated strategies during the session. The techniques taught included:

<u>Session</u>	<u>Skill</u>	<u>Technique 1</u>	<u>Technique 2</u>	<u>Technique 3</u>
1	Phonemic:	initial sound	rhyme	sound segmenting
2	Print:	letter name	letter sound	book conventions
3	Vocabulary:	define word	explain using picture	own experience
4	Narrative:	retelling	questions	paraphrase and explain

Once training was completed, each teacher conducted one book reading daily for six weeks with her class. The teacher read the same book for a week (i.e., five times), each time for

approximately 15-20 minutes. Each teacher was videotaped weekly. Following the videotaping, a short individual feedback session was conducted to review the videotape, with feedback provided.

Data Analysis

Teacher behaviors were analyzed from transcriptions of videotapes recorded at pretest and then once each week during the six week intervention period. Child data was obtained from the battery of five tests administered at pretest and posttest.

Adult Data

Each videotaped book reading was transcribed verbatim. The interaction was transcribed by individuals blind to the nature of the study or the book reading condition. All false starts, partial words, and other maze behaviors were transcribed, as well as each time a sound or letter was elicited. Points and other nonverbal behaviors that were part of the book reading are noted in brackets. Each adult utterance was assigned a number. The behavior was then categorized according to the class of behavior identified. The behavior was either classified as a “Meaning Behavior” or a “Form Behavior.” The behavior was further categorized for type of behavior as specified below.

Meaning Behavior is defined as anything that focused on the story, including naming or pointing out something in the illustration, reading the story, or a story embellishment such as commenting on the character’s behaviors or asking a prediction question. Each Meaning Behavior was coded for one of the following types:

1. Picture Talk: showing items, reading and then pointed to related information in the picture, naming or asking names for items, describing or asking questions about pictured actions, talk about perceptual information (colors, size, counting), making or asking

interpretations based on picture cues, retelling parts of the story based on pictures, or related own experience to pictures.

2. Reading: verbatim reading, read and retell, paraphrase or reword to explain or simplify after reading, reread information, confirm what is read.
3. Story/Plot: producing sound effects, story-related gestures, explanations of story, defining words, using voices, dramatize or re-enact, repair or clarify child's misperception, talk about background knowledge.

Form Behavior is defined as any behavior that focused on alphabet, letter, phonemic information, or print conventions. Each Form Behavior was coded for one of the following types:

1. Letter Reference: pointing to or asking children to point to letters, naming or asking for the name of a letter, identifying or asking children to identify the case (upper or lower case) of letters, pointing to or asking children to find matching letters, finding words that begin with a specified letter, or counting the number of times a specified letter appears on a page.
2. Sound Reference: produces or asks a child to produce a sound, produces or asks a child to produce a sound associated with a letter, produces or asks a child to produce a sound associated with a letter in specified word positions, shows or describes placement of tongue or other articulators for sound production, produces the sound in a word with exaggeration, asks children where a sound is located within a word spoken orally, repeats a sound after a child produces it.
3. Rhyme: identifies or asks children to identify words spoken orally that rhyme, points to or asks child to point to rhyming words in the text, asks children to judge

whether pairs of words rhyme, compare the spelling patterns of written words that rhyme, or asks children to think of additional words that rhyme.

4. Book/Print Conventions: identifies or asks children to identify the title, illustrator, author, or book parts such as the cover, spine, or pages, identifies or asks children to identify punctuation, white spaces, or end of line, identifies or asks children to identify a sentence, points to or asks children to point to words left-to-right as the text.

The number of behaviors in each category was totaled. The behaviors were analyzed for changes across time and reading book type. Each category of data (i.e., meaning and form) was subjected to a three way mixed design ANOVA (book type x time x measures). These results addressed questions 1 and 2 of this study.

Child Data.

The scores for the 4 child assessments were compared from pre-to-post for gain scores. The results were analyzed using a two (time) by two (book type) by four (variables) mixed-design ANOVA.

RESULTS

The purpose of this study was to explore whether storybooks designed to elicit talk about letters and sounds, termed “alphabet-storybooks” will generate more print referencing behaviors from Head Start teachers than traditional storybooks, and if there is a concomitant positive impact on the learning of the children in these classrooms. In addition, the meaning reference behaviors of adults and impact on children also were assessed to determine if meaning was sacrificed at the expense of print referencing. To accomplish this, four book reading behaviors, including two related to meaning (i.e., vocabulary and story elaboration) and two related to form (i.e., phonemic awareness and book conventions) were trained, followed by six weeks of intervention. The resulting behaviors of teachers and children were evaluated.

Teacher Behaviors

All four of the teachers in this study received the same four training sessions, two of which focused on meaning and two of which focused on form. The teachers were recruited from two schools housing Head Start programs. One teacher from each school was randomly selected to read stories from an emergent reading series, and the second teacher from each school read Phonic Faces alphabet storybooks, for a total of two teachers in each book condition.

Meaning-Related Behaviors:

Teachers were provided two instructional sessions focused on increasing the level of discussion regarding the meaning of the story. Meaning-related behavior was defined as anything that focused on the story, including naming or pointing out something in the illustration, reading the story, or a story embellishment such as commenting on the character’s behaviors or asking a prediction question. Table 4 profiles the mean number of picture, reading, and story-related behaviors produced each week by teachers in the two book conditions. During

the pretest reading, the emergent storybook elicited more meaning related behaviors, with an average of 12.5 behaviors compared to an average of 8.0 for the Phonic Faces books. However, following the first training session, more meaning-related behaviors were elicited for the Phonic Faces books (an average of 21 compared to 16) and the Phonic Faces condition elicited a greater number of meaning behaviors throughout with a high increase shown during the final two sessions. The category totals (i.e., picture, reading, and story reference) across the six weeks of intervention show that all three categories of meaning behaviors were greater for the Phonic Faces condition.

To determine if the differences were statistically reliable, a three way mixed design ANOVA (book type x time x measures) was conducted.

Table 4

Average Number of Meaning-Related Behaviors Produced by Teachers at Pretest and across Six Weeks of Intervention for Phonic Faces and Emergent Reader Book Conditions.

<u>Week</u>	<u>Picture Reference</u>		<u>Read Reference</u>		<u>Story Reference</u>		<u>Total</u>	
	<u>PhFa</u>	<u>EmRd</u>	<u>PhFa</u>	<u>EmRd</u>	<u>PhFa</u>	<u>EmRd</u>	<u>PhFa</u>	<u>EmRd</u>
Pretest	3.0	3.0	4.0	7.0	1.0	2.5	8.0	12.5
1	8.5	6.0	6.5	4.5	4.5	5.0	21.0	16.0
2	7.5	5.0	8.0	6.5	6.5	4.0	22.0	15.5
3	10.5	9.5	6.0	6.5	5.5	4.0	21.5	20.0
4	11.0	5.5	6.0	9.0	3.5	3.5	21.0	19.5
5	13.5	8.0	13.0	8.5	12.5	6.5	38.0	23.0
6	11.0	7.0	12.0	7.5	13.5	8.5	36.5	23.0
Average (6 weeks)	10.4	6.8	8.6	7.2	7.7	5.4	26.7	19.5

Results indicated a significant effect for time ($F=7.705$ df 6,12 $p < .013$, partial eta squared = .885). This difference includes the increase from pretest to after the first training session, and the general increase from weeks 3 through 7 and a large increase for the Phonic Faces book condition in session 5 (see Figure 2). There was

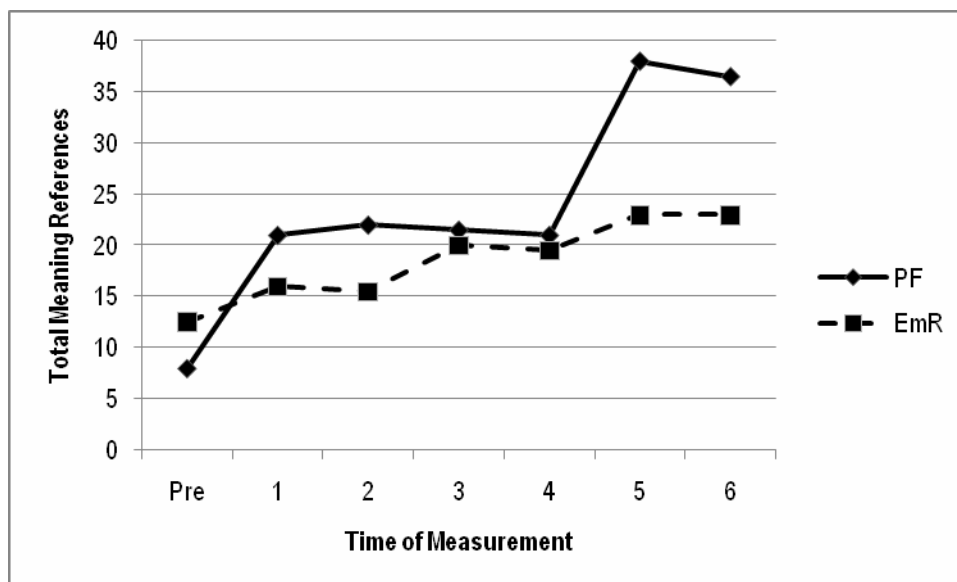


Figure 2. Teacher references to story meaning, including picture naming, story reading, or story embellishment.

a significant effect for book ($F = 280.33$, $df = 1,1$, $p < .038$, partial eta squared = .996), indicating that the Phonic Faces books promoted more references to meaning. This difference between book types appears to have been increasing in the final two sessions, however, the interaction between book type and time of measurement was not statistically reliable ($F = 2.632$, $df = 6,6$ $p < .132$).

Form-related Behaviors:

Teachers were provided two instructional sessions focused on increasing the level of behaviors directed at the form of the story. Form-related behavior was defined as anything that focused on the book or text, including references to letters, letter-sounds, rhyme, phonemes, or book conventions such as the book title, author, L-R reading, white spaces, or punctuation. Table 4 profiles the mean number of form-related behaviors produced each week by teachers in the two book conditions. During the pretest reading, reference to form was minimal for both types of books, with an average of 4.5 in each condition, the majority making reference to print conventions such as talking about the title, illustrator, and author. Following the first training session, references to form increased for both book types, but nearly twice as many occurred for

the Phonic Faces story with 25.0 compared to 13.5 for the emergent reader. In addition, those referring to alphabet information (i.e., letter and sound reference) were greater for the Phonic Faces condition than the emergent reader (9 versus 3.5 for letters; 7 versus 2.0 for sounds). The total number of form references elicited for the Phonic Faces books was greater than the emergent reader for four of the six sessions following training, with a session average of 18.91 versus 12.08 form references, respectively.

The mean differences were evaluated in a three-way ANOVA (book type x time x measures) that resulted in a significant effect for Time ($F = 3.468$, $df\ 6,12$, $p < .032$, partial eta squared .634) and a significant effect for Book Type ($F = 24.735$, $df\ 1, 2$, $p < .038$) with a very high partial eta squared of .925, without a significant interaction (see Figure 3).

Table 5

Average Number of Form-Related Behaviors Produced by Teachers at Pretest and across Six Weeks of Intervention for Phonic Faces and Emergent Reader Book Conditions.

Week	Letter reference		Sound reference		Rhyme reference		Book reference		Total	
	PhFa	EmRd	PhFa	EmRd	PhFa	EmRd	PhFa	EmRd	PhFa	EmRd
Pretest	1.0	0.5	0.5	0.0	0.0	0.0	3.0	4.0	4.5	4.5
1	9.0	3.5	7.0	2.0	5.5	4.5	3.5	3.5	25.0	13.5
2	8.5	2.5	8.0	2.5	4.5	7.0	2.5	2.5	23.5	13.5
3	5.5	2.0	4.0	2.0	1.5	8.5	1.5	3.5	12.5	16.0
4	4.5	1.0	3.5	1.5	2.0	11.0	1.5	3.5	11.5	17.0
5	8.0	2.5	10.0	2.5	2.0	5.5	4.0	3.0	24.0	13.5
6	7.0	1.5	8.5	1.5	4.0	8.5	4.0	2.5	23.5	14.0
Average (6 weeks)	7.2	2.5	6.9	2.1	3.4	7.5	2.4	2.4	20.0	14.6

There was also a significant interaction of Time by Measurement by Book Type ($F = 3.815$, $df\ 18, 36$, $p < .0001$, partial eta squared = .656). Figures 4 through 7 below compare the changes over time for the two book types for each measure of form. Figure 4 profiles responses to alphabetic letters.

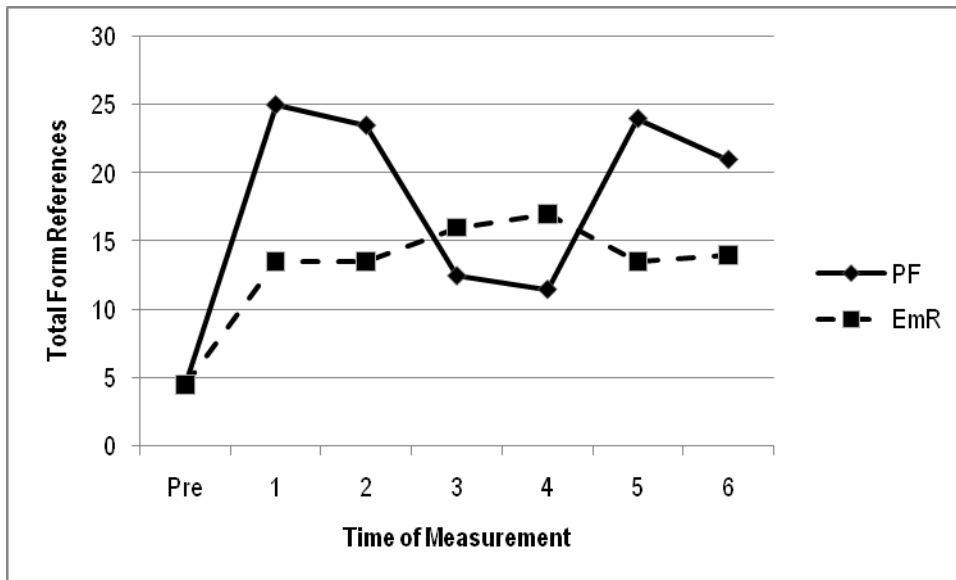


Figure 3. Significant effects found for Form Reference behaviors across time as well as for type of book.

The two book types were similar at pretest, but following training, which included teacher attention to letters and initial sounds, the Phonic Faces book elicited nearly three times as many teacher references and remained at a higher level across the six intervention sessions. Similar results were shown for references to letter-sounds, as shown in Figure 5. Following similar performance at pretest, more talk was produced regarding letter-sounds each week of intervention with the highest productions occurring for the final two sessions. These two behaviors were the strongest measures favoring the Phonic Faces condition and in the direction of the significant effect for book type.

Figure 6 profiles teacher behaviors related to rhyme. Both book types initially elicited no talk about rhyme, but following training teachers in both groups talked about rhyme each session. However, the Emergent Readers elicited more teacher talk about rhyme for the last five weeks of intervention. This behavior was not in the direction of the effect for book type and thus did not account for the significant group difference.

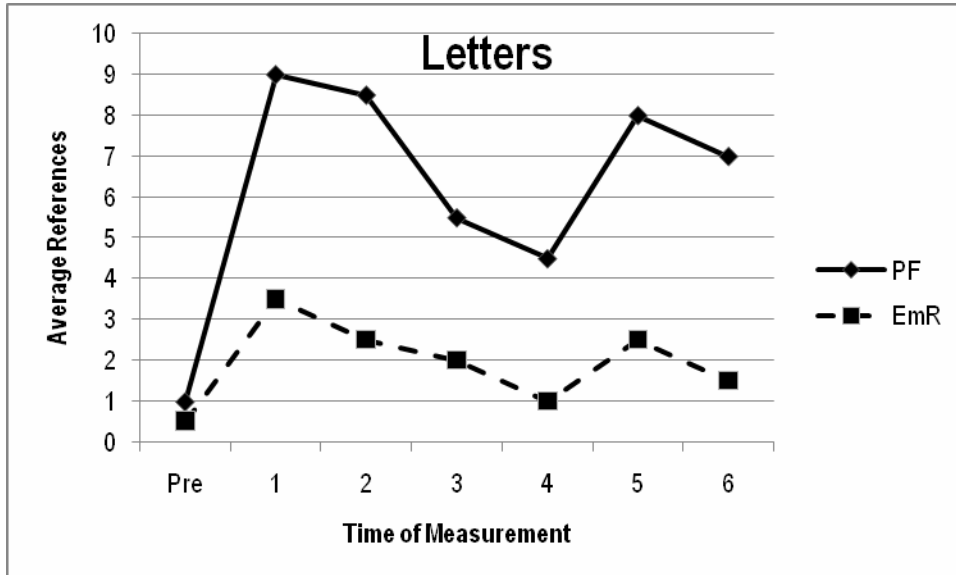


Figure 4. Teacher references to letters were higher each week for the Phonic Faces condition.

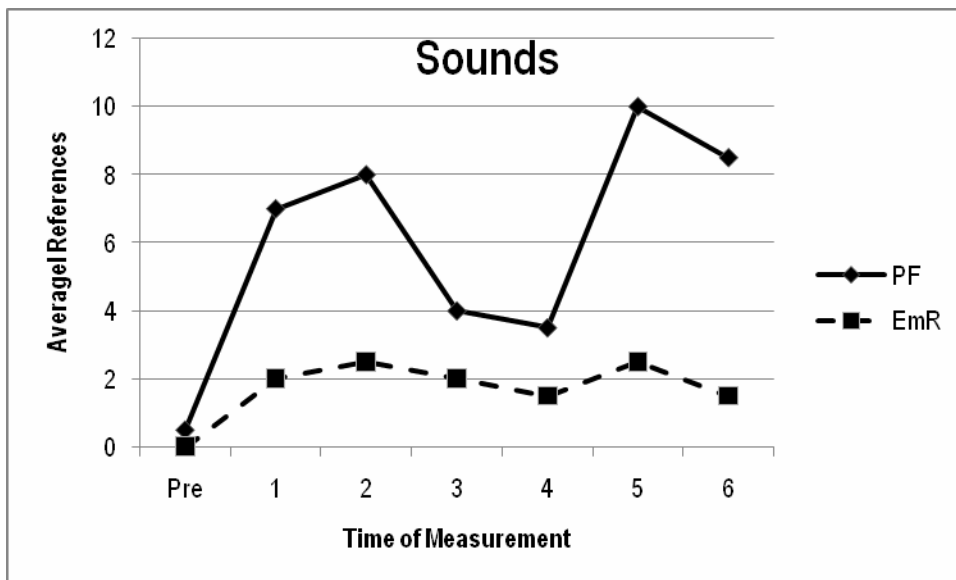


Figure 5. Teacher references to letter-sounds were higher each week for the Phonic Faces condition.

Figure 7 profiles teacher behaviors related to book conventions, such as identifying authors, illustrators, punctuation, and other elements of the book and print. Both books elicited a small number of comments (average 1.5 to 4) each week with variability across time and no clear

advantage for either condition. This behavior was not in the direction of the effects for book type and thus did not account for the significant difference for book type.

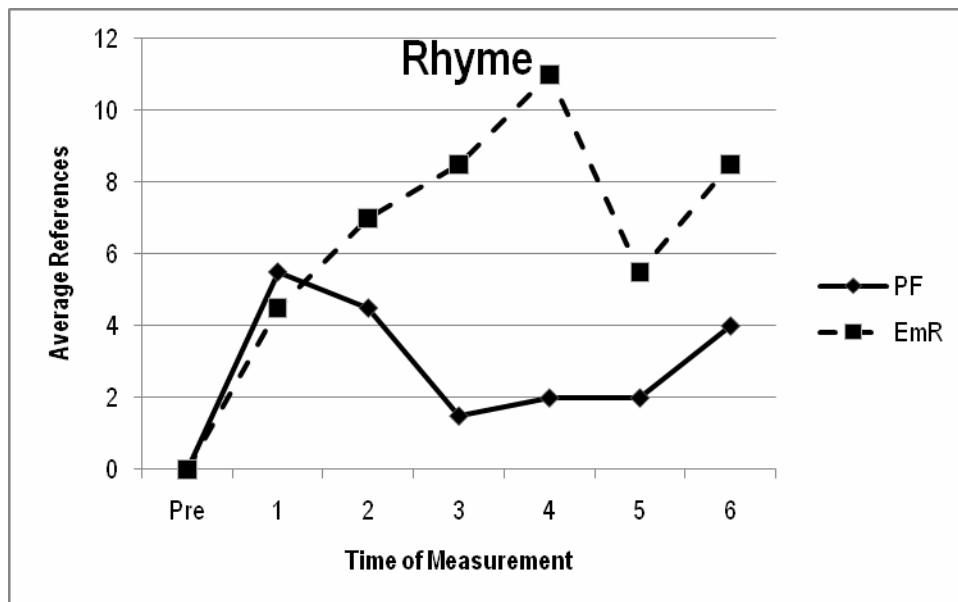


Figure 6. Teacher references to rhyme were higher each week for the Emergent Reader condition except for pretest and week one.

Child Behaviors

The children in this study were from four different classrooms in two schools.

Matched subjects were taught using either the Phonic Faces or the Emergent Reader book, with one classroom at each school in each condition. Children were assessed using measures of vocabulary, book conventions, and phonemic awareness at pretest and again following six weeks of intervention. Statistical reliability of apparent mean differences was analyzed via a two Book Type (Phonic Faces versus Emergent Reader book) by two Time (pretest and posttest) by three Measures (vocabulary, print concepts, phonemic awareness) mixed-design ANOVA. Data for the variable of Measures violated the assumption of sphericity (Mauchly's $W = .747$, $p < .047$) so F values involving Measures were corrected via the Greehouse-Geisser correction for degrees of freedom. As seen in Tables 6 and 7, both groups of children showed better average

performance at posttest for all of the measures. This apparent result proved to be highly significant with a very large effect size as reflected in the main effect for Time ($F = 146.763$, df 1,22, $p < .0001$, partial eta squared = .870).

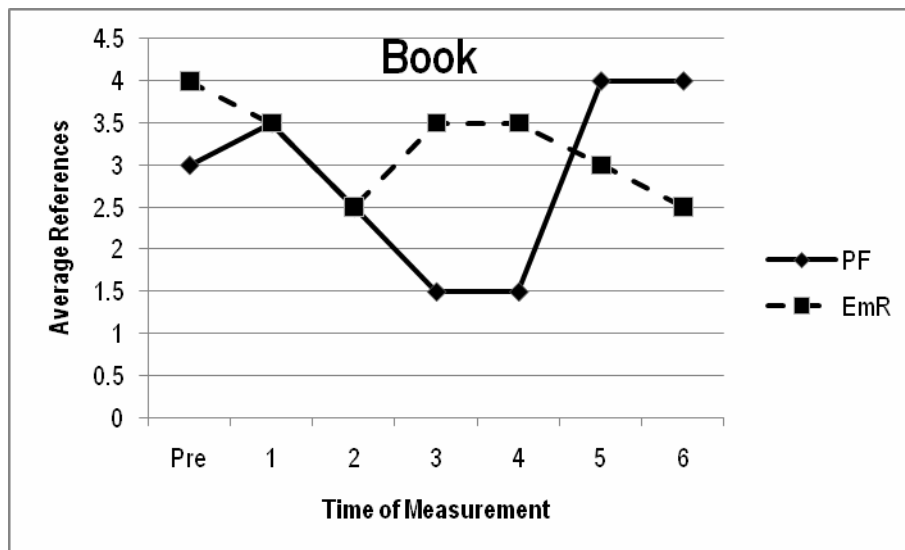


Figure 7. Teacher references to book conventions were variable across weeks with no clear advantage to either book condition.

The average total score change from pretest to posttest was 4.46 for all of the children. The different measures increased at different rates as indicated by the significant interaction of Time by Measure ($F = 18.465$, df 1.71, 37.71, $p < .0001$, partial eta squared = .456). The average gains from pretest to posttest were 3.67 for Concepts of Print, 6.0 for Vocabulary, and 11.54 for Phonemic Awareness, suggesting that the children as a group were adding most to their knowledge of Phonemic Awareness and least in Concepts of Print.

One of the primary hypotheses of this study was that the type of book would affect child learning. This hypothesis was supported by the significant interaction of Time by Measure by Book Type ($F = 4.337$, df 1.71, 37.71, $p < .025$, partial eta squared = .165). This result indicates that the book used in the classroom differentially affected increases in measures of vocabulary,

concepts of print and phonemic awareness. Tables 6 and 7 report the pretest, posttest and gain data for the individual children.

Vocabulary was used to measure changes in meaning. Table 6 reveals that the Phonic Faces and Emergent Reader conditions were approximately equal at pretest with group means of 9.3 versus 9.6, respectively. At posttest, the gain scores for the Phonic Faces condition appear to be greater (+6.7 versus +5.3), however, this difference was not statistically reliable ($t = .874$, $df = 22$, $p < .394$).

The adapted Concepts About Print test was used as a measure of book form and conventions such as punctuation. As seen in Table 6., the groups were approximately equal at pretest (0.9 for Phonic Faces versus 0.7 for Emergent Reader). Gains were greater at posttest for the Emergent Reader group (+1.3 versus +2.4) for this measure ($t = 3.44$ $df = 22$, $p < .002$).

The Initial Sound (Alliteration) and Rhyme tasks were used to measure changes in phonemic awareness. Table 7 reveals that the Phonic Faces and Emergent Reader conditions were approximately equal for Initial Sound at pretest with group means of 0.6 versus 0.4, respectively. At posttest, the gain scores for the Phonic Faces condition were greater (+2.0 versus +0.5) ($t = 2.207$, $df = 22$, $p < .038$). Similarly, the groups were approximately equal at pretest for Rhyme (0.8 for Phonic Faces versus 1.0 for Emergent Reader), with greater apparent gains at posttest for the Phonic Faces group (+5.2 versus +3.4) for this measure, however this difference failed to reach statistical significance ($t = 1.966$, $df = 22$, $p < .062$).

Conclusion

The results of this study provided mixed results. Head Start teachers did change their book reading interactions following four training sessions in all categories of behaviors Head Start teachers did change their book reading interactions following four training sessions in all

categories of behaviors measured, as demonstrated by significant main effects for time for both meaning and form.

Table 6

Comparison of Children's Pretest and Posttest Scores for Measures of Vocabulary and Book Concepts.

	Vocabulary						Book Concepts					
	PhFaces			EmerRd			PhFaces			EmerRd		
	Pre	Post	Gain	Pre	Post	Gain	Pre	Post	Gain	Pre	Post	Gain
	12	18	+ 6	11	18	+ 7	0	0	+ 0	0	2	+ 2
	8	17	+ 9	12	18	+ 6	0	2	+ 2	1	4	+ 3
	9	12	+ 3	10	15	+ 5	1	2	+ 1	1	4	+ 3
	11	30	+19	5	8	+ 3	1	2	+ 1	2	4	+ 2
	16	18	+ 2	11	22	+11	1	1	+ 0	0	3	+ 3
	9	15	+ 6	11	17	+ 6	1	3	+ 2	0	3	+ 3
	10	13	+ 3	12	17	+ 5	1	4	+ 3	1	2	+ 1
	5	14	+ 9	12	18	+ 6	1	2	+ 1	0	2	+ 2
	7	12	+ 5	8	14	+ 6	1	1	+ 0	0	2	+ 2
	6	10	+ 4	8	14	+ 6	1	2	+ 1	2	4	+ 2
	5	10	+ 5	9	12	+ 3	2	4	+ 2	1	4	+ 3
	<u>13</u>	<u>22</u>	<u>+ 9</u>	<u>7</u>	<u>7</u>	<u>+ 0</u>	<u>1</u>	<u>3</u>	<u>+ 2</u>	<u>0</u>	<u>3</u>	<u>+ 3</u>
Mean	9.3	15.9	+6.7	9.7	15.0	+5.3	0.9	2.2	+1.3	0.7	3.1	+2.4

Significant effects for book type were also obtained in favor of the Phonic Faces alphabet storybooks for teacher references to meaning, letters, and letter sounds. No significant effects were found for teacher talk about rhyme or book conventions.

Similarly, children did improve across time in both book reading conditions as demonstrated by significant main effects for time for measures of vocabulary, print concepts, and

phonemic awareness. Book type was also significant, with the two conditions eliciting different results.

Table 7
Comparison of Children's Pretest and Posttest Scores for Measures of Phonemic Awareness, including Initial Sound and Rhyme.

Initial Sound							Rhyme						
PhFaces			EmerRd				PhFaces			EmerRd			
Pre	Post	Gain	Pre	Post	Gain		Pre	Post	Gain	Pre	Post	Gain	
0	0	+ 0	0	0	+ 0		0	6	+ 6	0	1	+ 1	
0	5	+ 5	0	0	+ 0		1	11	+10	0	3	+ 3	
0	1	+ 1	0	2	+ 2		1	5	+ 4	0	5	+ 5	
3	4	+ 1	0	0	+ 0		2	10	+ 8	0	6	+ 6	
3	2	- 1	2	1	- 1		3	6	+ 3	0	0	+ 0	
0	1	+ 1	2	2	+ 0		0	6	+ 6	3	5	+ 2	
0	2	+ 2	0	0	+ 0		0	6	+ 6	7	11	+ 4	
0	3	+ 3	0	0	+ 0		0	7	+ 7	0	4	+ 4	
0	2	+ 2	0	2	+ 2		0	4	+ 4	0	4	+ 4	
0	1	+ 1	0	1	+ 1		0	5	+ 5	1	6	+ 5	
0	2	+ 2	1	2	+ 1		1	2	+ 1	0	4	+ 4	
<u>1</u>	<u>8</u>	<u>+ 7</u>	<u>0</u>	<u>1</u>	<u>+ 1</u>		<u>1</u>	<u>3</u>	<u>+ 2</u>	<u>1</u>	<u>4</u>	<u>+ 3</u>	
Mean	0.6	2.6	+2.0	0.4	0.9	+0.5	0.8	5.9	+5.2	1.0	4.4	+3.4	

The book types were equally effective in increasing vocabulary, the measure of meaning in this study. The emergent reader elicited significantly greater gains in knowledge about book conventions, such as knowing the author, illustrator, and punctuation. The alphabet storybooks elicited significantly greater gains in phonemic awareness. The measure of rhyme favored the alphabet storybooks but failed to reach significance.

DISCUSSION

The purpose of this study was to explore the effects of books designed to elicit talk about letters and letter sounds on the behaviors of adults reading the books as well as the children in their Head Start classrooms. Behaviors of both adults and children were compared to classrooms where traditional emergent readers were read. In addition, the behaviors of both the adults and children were examined to determine if a greater focus on print and sound referencing occurred at the expense of attention to the meaning of the story. Results indicated patterns of interaction occurring between book type and types of teacher as well as child measures.

Book Effects On Meaning

The goal of the Phonic Faces alphabet storybook was to create a context for facilitating phonemic awareness and print knowledge within the context of a meaningful storybook. It was predicted that the benefits of both types of books would be realized while reading the same book and without the need for the extensive training shown in studies that taught print referencing within traditional storybook reading (Ezell & Justice, 2000; Ezell et al., 2000). That is, the alphabet storybooks would naturally elicit more talk about print as the story was read, but not at the expense of benefits accrued to storybook reading such as vocabulary development, plot interpretation, and understanding character motives (Teale & Sulzby, 1991; van Kleeck, 1990).

The emergent readers used in this study fit the pattern of a traditional storybook designed for a young child who is just becoming aware of the reading process. The books tell a simple story using parallel episodes that follow a pattern, often in rhyme (“Obadiah jumped in the fire. The fire was hot ... so he jumped in a pot.”) The pictures and text overlapped, so that information in the text was also shown in the illustrations, which provided much detail using colorful and often humorous drawings. Thus, this book was conducive to a discussion about the meaning of the story and reference to rhyme.

The Phonic Faces alphabet storybooks also told simple stories using parallel episodes that followed a pattern, often in rhyme (“Effy was hot so she turned on her fan. The fan blew a candle ... the flame flipped into a pan.”) The pictures and text overlapped, with fewer details depicted in the illustrations than the emergent readers. However, on each page, the character was shown making the sound associated with a target letter as a natural part of telling the story, so that Effy frantically blew air in the form of the /f/ sound as she turned on her fan and as the fan blew the candle and so forth.

The results indicated that following training, teachers in both book conditions increased their talk about the meaning of the story at a statistically reliable level. Teachers initially primarily read the text verbatim or made a brief comment about one or two pictures within the book, resulting in an average of 8 meaning behaviors for the Phonic Faces book and 12.5 for the emergent reader. This difference occurred in part because the emergent reader books had more pages per book (12 versus 16 pages for the Phonic Faces versus emergent readers, respectively) with some double-page illustrations and accompanying text occurring in both books. Teachers received two 30-minute trainings, the first on vocabulary (defining a word, explaining a word or concept using the picture, elaborating on a word or concept by recounting a personal experience) and the second on narrative or plot (retelling part of the story, asking plot-related questions, paraphrasing or explaining events from the story). Following the training, talk about meaning immediately increased for both book types and continued to increase across time, with a final week average of 36.5 for the Phonic Faces book and 23.0 for the emergent reader. These findings suggest that teachers can learn to incorporate more talk about the meaning of the story following minimal training, that increased talk about meaning occurs with experience reading in this manner, and that the effects are relatively long-term (i.e., six weeks after training).

The results further showed that the Phonic Faces books were more effective in eliciting teacher talk about the meaning of the story than the traditional emergent reader. More meaning-related behaviors were elicited for all three categories (i.e., picture reference, story/plot reference, and reading the words of the text). Teacher behaviors included comments, explanations, elaborations, questions directed to the children, reading text exactly, or paraphrasing text. Interestingly, the greatest differences occurred for talk about pictures, for which the Phonic Faces books averaged 10.3 behaviors compared to 6.8 for the traditional emergent reader, despite the greater detail in the illustrations of the latter books and more illustrated pages per book. The second greatest difference was for talk about the plot, for which the Phonic Faces books elicited an average of 7.7 teacher behaviors compared to 5.3 for the emergent reader. Reading behaviors, whether verbatim or paraphrased, were also higher for the Phonic Faces condition with an average of 8.6 versus 7.1, despite a greater number of pages per text in the emergent reader.

The effects of the book reading conditions and concomitant teacher behaviors on gains in child meaning were measured using gains in oral vocabulary. Results indicated a significant effect for time, indicating that children in both book conditions increased their vocabulary from pretest to the final session. Both groups performed similarly at pretest, with an average of 9.3 versus 9.7 for the Phonic Faces and emergent readers, respectively. Both groups also performed similarly at posttest, with average scores of 15.9 versus 15.0. The difference between the groups was not significant. This occurred in part because the vocabulary measured was not specific to the stories in either book condition, but rather those that appeared on the DIBELS instrument. A vocabulary measure more specific to words selected from each book condition may have yielded greater differences. However, the fact that significant differences were obtained in just six weeks suggests that the increased talk about the books by the teachers did have a positive impact

on vocabulary learning, although a control group that received no training would be needed to strengthen this contention.

Book Effects on Print Conventions

For children to begin the process of reading, they must understand fundamental concepts about a book as a unique object that does more than display interesting pictures. Conventions such awareness that the print carries a message, left to right and top to bottom word progression, upper and lower case letters, punctuation, and common characteristics such as an author, title, illustrator, and book front and back are considered fundamental to this understanding (Clay, 1972). Pretest readings revealed that teachers in both groups did talk about book and print conventions, with averages of 3.0 and 4.0 behaviors for the Phonic Faces and emergent reader conditions, respectively. Conventions about print and book were focused on in the third training session prior to intervention, along with attention to letters. Results indicated that teachers did not change their references to these elements and the mean number of references actually decreased from pretest to posttest (a six week average of 2.4 for each group), although these changes were not significant. These results suggest that teachers were sufficiently aware of these elements and already talked about them during book reading prior to training, and continued to talk about them at approximately the same level.

The effects on child learning were measured using the adapted Concepts About Print test (Clay, 1972). Results indicated that both groups were equal at pretest, showing little knowledge of print or book concepts with an average of 0.9 versus 0.7 out of ten items for the Phonic Faces and emergent readers, respectively. Children who did respond were able to indicate the front of the book and/or where to begin reading. At posttest all subjects improved, with a significant effect found for time. However, gains were greater for the emergent reader condition at a statistically reliable level, with posttest means of 2.2 for Phonic Faces (gain of +1.3) compared to

3.1 for emergent readers (gain of +2.4). Thus, although adult talk about book concepts was similar in frequency for the two books, children in the emergent reader group learned more about these conventions. In particular, more children were able to indicate the left-right, top-bottom directional patterns of reading and could identify a question mark. Four of the emergent reader books were written with repeating questions across pages (“What do Meanies eat? Sleep? Drink? Wash?” “What can this little monster do?” “Will you be my mother?”), while only two of the Phonic Faces books were in this format. While significant, the difference between the conditions was 1 point.

Book Effects on Phoneme and Letter Awareness

A primary question of this study was whether the design of the Phonic Faces alphabet storybooks would work as predicted to increase the print and sound referencing behaviors of teachers reading the books. Within Phonic Faces stories, a target letter is highlighted on each page of the story, usually in the mouth of the character producing the corresponding sound as a natural part of the plot of the story. If teachers attend to these cues and prompt children to produce the sounds in response to the letters throughout the reading, numerous experiences with letter-sounds can be provided by reading the book. Two teacher behaviors, letter referencing and letter-sound referencing were used to test this prediction.

At pretest teachers made minimal reference to letters or letter sounds for either book condition (an average of 1 letter reference and 0.5 letter-sound references for the Phonic Faces book, and 0.5 letter and 0.0 letter-sound references for the emergent reader). Following the training session, references to both letters and sounds increased for both book conditions, but approximately three times as many referencing behaviors occurred for the Phonic Faces book (9.0 vs 3.5 letter references; 7.0 versus 2.0 letter-sound references). This pattern continued across the six weeks, resulting in significant increases for letters and letter-sounds for both book

reading conditions across time. The letter references for the six weeks of intervention averaged 7.2 per book reading for the Phonic Faces condition versus 2.5 for the emergent reader, and 6.9 versus 2.1 for references to letter-sounds. When letter and letter-sound averages are combined, the Phonic Faces books averaged 14.1 references to alphabetical information, or more than 1 adult referencing behavior per page. These differences also were reliable, indicating that the Phonic Faces books did consistently maintain a greater focus on letters and sounds throughout the reading as predicted.

To determine the effects on child learning, the Alliteration subtest of the DIBELS *Preschool IGD* was used to measure recognition of initial sounds in words. The groups at pretest were equal as determined by t-tests with an average score of 0.6 and 0.4 for the Phonic Faces and emergent reader groups, respectively. At posttest, the Phonic Faces group averaged 2.6 (a gain of +2.0) compared to the minimal gains at posttest for the emergent reader group (0.9; gain of +0.5). These differences were significant, indicating that the Phonic Faces books were effective in increasing awareness of sounds for Head Start children.

Book Effects on Rhyme

The ability to recognize and produce rhyming words provides evidence that a child is beginning to become aware of the concept of a word that can be segmented into parts. Rhyme requires that the initial sound (onset) be isolated from the word ending (rime) and then changed to create new words that maintain the same word ending. A developmental progression of rhyming ability has been shown in the research, starting at three years of age when children recite nursery rhymes and songs with rhyme, and progressing to selecting rhyming words at four years, producing rhyming words at four and a half years, and completing the last word of a poem using a rhyming word at five years (Ball & Blachman, 1991, Norris, 2003) (see Appendix 1).

Both the Phonic Faces alphabet storybooks and the emergent readers had opportunities to

talk about rhyme incorporated into the text, although individual books varied in the amount of rhyme they contained. Four of the six Phonic Faces books incorporated from 4 to 10 rhymes into the story, for a total of 29 instances of rhyming word pairs. Two of the books did not contain explicit rhyming words. Five of the six emergent reader books incorporated from 1 to 10 rhymes, again for a total of 29 rhyming word pairs. In addition, these books contained numerous refrains where the same word patterns were repeated multiple times (“Meanies sleep in garbage cans, Meanies sleep in garbage cans, Meanies sleep in garbage cans. That’s where Meanies sleep.”)

Teachers at pretest did not explicitly refer to rhymes during the initial book reading even though both books contained rhymes. Following training, attention to rhyme immediately increased, with an average of 5.5 versus 4.5 references during the first intervention session for the Phonic Faces and emergent reader conditions, respectively. At least one reference to rhyme occurred for both books each week, even when there was not an explicit rhyme in the text of the story (i.e., teachers would ask children to think of a rhyming word to correspond with the a word in the book). The increase in reference to rhyme was significant for time for both book conditions.

Even though the number of actual rhyming word pairs was the same between conditions, the teachers talked more about rhyme for the emergent reader books, with an average of 3.4 references per book for the Phonic Faces books and 7.5 for the emergent readers. While teachers in the emergent reader condition rarely remembered to talk about letters and sounds as they read, they took advantage of nearly every opportunity to talk about rhyme found in the text. For the Phonic Faces books, rhyme was referenced with high frequency but in some cases, only half of the actual rhyming pairs were addressed by the teachers who instead chose to talk about letters or sounds. However, these differences were not significant.

Children in both groups responded to teacher behaviors with significant increases in gain scores for rhyming from pretest to posttest. Children at pretest showed minimal rhyming skills for both book conditions, with means of 0.8 and 1.0 for the Phonic Faces and emergent reader conditions, respectively. At posttest, the children averaged 5.9 correct rhymes for the Phonic Faces condition and 4.4 for the emergent readers. Interestingly, gain scores for the Phonic Faces condition were greater (gains of +5.2 versus +3.4) despite the more frequent reference to rhyme by teachers for the emergent readers and the fact that two Phonic Faces books did not contain rhymes. However, while the differences neared significance, they were not reliable. A longer intervention period and selection of books that all contain rhymes for the intervention sessions would help to determine if the Phonic Faces books hold an advantage for becoming aware of rhyme.

Summary

A series of studies (Ezell & Justice, 2000; Ezell et al., 2000) demonstrated that adults can be trained to use reference to print when reading picture books and/ or rhyming books to preschool children. In these studies, adults (e.g., speech-language pathology students, parents) were taught to use print-referencing strategies, a set of strategies including questions, comments, and requests about print as well as several nonverbal strategies such as pointing to print or tracking print left-to-right while reading books with children. The training successfully increased adult print-referencing behaviors during picture-book-reading interactions with 4-year-old children, and increased children's verbal comments about print.

The results of the current study are consistent with those of Ezell and her colleagues. Consistent with past studies, the positive influence of training emergent literacy-enhancing behaviors was evident by an increase of these behaviors exhibited by the teachers across the six weeks of training. Both book types exhibited significant gains in the number of teacher

behaviors elicited for meaning and form (letters, letter-sounds, rhyme, and print concepts) following training. Greater changes were obtained for the Phonic Faces books for meaning, letters, and letter sounds, indicating that the Phonic Faces books were effective in reminding the adult to talk about the alphabet throughout the book reading, but not at the expense of helping the children to interpret the meaning of the story. The effects of the training were maintained across the six weeks to a greater extent for the Phonic Faces books.

The impact of storybook reading also had positive outcomes for the children participating in the Head Start classrooms. Children in both groups improved in vocabulary, print concepts, and phonemic awareness from pretest to posttest, indicating that both books were effective in facilitating developmental reading abilities in four year old children. The two book types were equally effective in increasing vocabulary, a measure of meaning. The emergent reader elicited greater gains in knowledge about book conventions, but the one point difference may have been related to more frequent exposure to question marks in the emergent reader books selected. The Phonic Faces condition resulted in greater gains in phonemic awareness, consistent with the focus on letter-sounds throughout the reading of these books.

Limitations and Future Research

Although the results of the present study provided evidence that training focused on emergent literacy-enhancing behaviors during storybook reading had a positive impact on teachers and students, several limitations need to be addressed in future research. Four limitations identified include: (a) sample size, (b) length of study, (c) lack of child letter/sound pre/post assessment, (d) diversity of participants.

The first limitation pertains to the small sample size. Although the study yielded significant results a larger sample size would increase statistical power which will allow the results to be generalized to a larger population.

The second limitation is length of the study. While the current study resulted in significant gains in children's emergent literacy skills, a more extensive study would possibly yield greater long term gains in all areas measured.

The third limitation is, the results of this study allude to an improvement in teacher reference to letter/sound knowledge after training however, provided similar gains could not be measured for the children due to the lack of pre/post assessment of the children's letter/sound knowledge. Future studies should utilize an assessment instrument so that this area of emergent literacy can be measured.

Lastly, the participants in this study were all African American children from families of low socioeconomic status. Therefore, the results cannot be generalized to the general population, which includes numerous ethnic groups and social classes.

Additionally, the adult participants were all African American with similar educational backgrounds and teaching experience. Future studies should provide more diversity in the areas of ethnicity, educational background and literacy training.

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APPENDIX A: PARENTAL CONSENT FORM

Parental Consent Form

Literacy Skills of Head Start Children

The purpose of this study is to learn how much children can learn in the areas of phonemic awareness, print awareness, vocabulary and story retelling when teachers use repeated readings. If you have any questions about this study you may contact Patricia Brazier-Carter, LSU Graduate Student, at 772-9909 from 9:00 am to 4:00 pm Monday thru Friday. This study will take place at your child's Head Start Center.

40 Head Start students (3 and 4 year olds) considered to be developing language normally. Children who have a hearing loss or history of medical, behavioral, or psychological disorders will not be able to participate in the study.

Your child will attend 2 sessions, lasting no longer than 30 minutes at his/her center. During the sessions, your child will complete two short tests. Additionally, your child will participate in daily storybook readings during the regular Head Start Daily routine.

This study will help speech language clinicians and Head Start teachers learn about the literacy skills of Head Start children and help understand what types of intervention techniques and materials are the most successful. There are no known risks associated with participating in this project.

This study is confidential. All materials will be coded and children's names and personal information will be kept secure. Results of this study may be published, but no names or identifying information will be included for publication. Participant identity will remain confidential unless release is legally compelled.

Participation in the study is voluntary, and a child will become part of the study only if you and your child agree to the child's participation. Children's assent will be verbal. At any time, you or your child may choose not to participate or to withdraw from the study at any time with no jeopardy to services provided by their Head Start Center or other penalty at the present time or in the future. We also reserve the right to discontinue your child's participation in the study if you or your child share with us information during session that indicates that your child does not meet the inclusive/exclusive criteria for research participation listed above.

Signatures

The study has been discussed with me and all of my questions have been answered. I may direct additional questions regarding study specifics to the investigators. I agree to participate in the study described above and acknowledge the researchers' obligation to provide me with a copy of this consent form if signed by me.

Parent's Signature

Date

Child's Name _____ Child's Date of Birth _____ Gender _____ Race _____

Is your child receiving services by a Speech Language Pathologists? Yes NO

If you would like us to send you the results of this study, please write down your address here.

APPENDIX B: STUDY FLYER

Literacy Skills of Head Start Children

The purpose of this study is to learn how much children can learn in the areas of phonemic awareness, print awareness, vocabulary and story retelling when teachers use repeated readings. If you have any questions about this study you may contact Patricia Brazier-Carter, LSU Graduate Student, at 772-9909 from 9:00 am to 4:00 pm Monday thru Friday. This study will take place at your child's Head Start Center.

Four Head Start teachers will read storybooks daily for six weeks. Training will be provided for the teachers to assist them with techniques to elicit the desired responses. Each book reading will require approximately 15-20 minutes per day. Teachers will be videotaped 7 times, once at the beginning and at the end of each of the 6 weeks.

This study will help speech language clinicians and Head Start teachers learn about the literacy skills of Head Start children and help understand what types of intervention techniques and materials are the most successful. There are no known risks associated with participating in this project.

APPENDIX C: TEACHER CONSENT

Teacher Consent Form

Literacy Skills of Head Start Children

The purpose of this study is to learn how much children can learn in the areas of phonemic awareness, print awareness, vocabulary and story retelling when teachers use repeated readings. If you have any questions about this study you may contact Patricia Brazier-Carter, LSU Graduate Student, at 772-9909 from 9:00 am to 4:00 pm Monday thru Friday. This study will take place at your child's Head Start Center.

Four Head Start teachers will read storybooks daily for six weeks. Training will be provided for the teachers to assist them with techniques to elicit the desired responses. Each book reading will require approximately 15-20 minutes per day. Teachers will be videotaped 7 times, once at the beginning and at the end of each of the 6 weeks.

This study will help speech language clinicians and Head Start teachers learn about the literacy skills of Head Start children and help understand what types of intervention techniques and materials are the most successful. There are no known risks associated with participating in this project.

This study is confidential. All materials will be coded and children's names and personal information will be kept secure. Results of this study may be published, but no names or identifying information will be included for publication. Participant identity will remain confidential unless release is legally compelled.

Participation in the study is voluntary, and a teacher will become part of the study only if you agree to participate. At any time, you may choose not to participate or to withdraw from the study at any time with no jeopardy to services provided by their Head Start Center or other penalty at the present time or in the future.

Signatures

The study has been discussed with me and all of my questions have been answered. I may direct additional questions regarding study specifics to the investigators. I agree to participate in the study described above and acknowledge the researchers' obligation to provide me with a copy of this consent form if signed by me.

Teacher's Signature

Date

Teacher's Name_____

Gender_____

Race_____

Teacher's Educational Background _____

Have you attended any literacy workshops? __yes __no If yes how many?_____

If you would like us to send you the results of this study, please write down your address here.

APPENDIX D:SOURCES OF PHONEMIC AWARENESS

10 SOURCES OF PHONEMIC AWARENESS							
SDS levels Constellation Point	Description <i>Event Structure</i>	Label <i>Emerging Concept</i>	Attribution <i>Slot-Filler Categories</i>	Interpret <i>Event Sequences</i>	Inference <i>Categorical Organization</i>	Evaluation <i>Hierarchical Organization</i>	Meta-language <i>Integration</i>
	3-4 years	4-4.6 years	4.6-5 years	5-5.6 years	5.5-6 years	6-7 years	7+ years
Alphabet Knowledge	Recites the alphabet (rote memory)	Knows many letter names (Imno)	Knows letters in own name	Uses letter names to spell words LFNT	Writes the alphabet in order	Alphabetizes words by first letters	Uses alphabet for acronyms, word play INVU4URAQT
Concept of Wordness	Words that define language used interchangeably (letter, word, name)	Separates sentences into words	Separates words into syllables	Separates words into sounds	Counts the number of sounds in words	Decodes real words	Decodes nonsense words
<i>Separation of Form & Meaning</i>	Word meaning and form inseparable "train" is long	Associates letter name with object "a" is for apple	Associates letter sound with object /ah/ is for apple	Associates letters with sounds /ah/ is for "a"	Blends sounds to form meaningful words /d/ /o/ /g/	Manipulate sounds at word begin/ending /t/ /og/ do /t/	Coordinates meaning and form for fun. Crossword puzzles
Rhyme	Recite nursery rhymes, songs, chants in whole or part	Pick rhyming words from choice of 2 or 3 words	Substitute initial sound to make rhyming words	Completes last word of poem	Coordinates sound & rhyme (What starts with X and rhymes with Y)	Completes last line of poem	Word and sound play (puns, tongue twisters)
WHOLE-TO-PART	Word form, meaning, function inseparable	Can call a "dog" a "cat" (a word is arbitrary)	Can divide compound words (cup cake)	Can delete one word of compound (sun shine)	Recognizes phonograms as subunits of a word	Delete initial consonant (Say word, delete sound)	Manipulates sounds using patterns (Pig Latin)
Sound in Word Position	Predicts a word using a picture cue	Tells whether initial consonants are same/different	Finds words from choice of 3 with same initial sound	Match words to a target by initial sound (choice of 3)	Tells whether final consonants are same/different	Tells which part of a word makes target sound	Find words with same final consonant (choice of 3)
Print Conventions	Can locate the words in a book (illustrated)	Points to words using a general sweep (L to R)	Points to the beginning and ending words of a text	Word-by-word pointing to words in a familiar text	Knowledge of function of spaces vs words	Uses periods. Capitalizes I, first word of sentence	Uses / / / / / / Capitalizes proper nouns
Word Recognition	Uses generic word to "read" environmental print (gum)	Uses specific word to "read" environmental print (Wrigley's)	Can match written words not recognized	Recognizes a small number of sight words	Environmental print recognized by first letters	Recognize and learn new sight words daily	Recognizes when letters out of order within words
MetaRules	Defines words by perceptual features (long, sharp)	Defines words by function features (eat with it)	Defines words by subordinate categories (name foods)	Can provide a definition of a "word"	Can provide a definition of a "sentence"	Uses phonic rules for reading and spelling	Can state the phonic rule that applies to a word
Developmental Spelling	Draws pictures to represent written words	Attempts writing using scribbles, lines	Copies words. Prephonemic (random use of real letters)	Early phonemic. First sounds and syllable shapes attempted	Spells syllables using letter-names, some vowels	Phonetic spelling for regular CVC words	Uses rules ("i" before "e" except after "c") to spell conventionally

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